

The Institute

Turning Information into Insight

A collaboration among Geisinger Commonwealth School of Medicine, Johnson College, Keystone College, King's College, Lackawanna College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Scranton, Penn State Wilkes-Barre, The Wright Center for Graduate Medical Education, University of Scranton & Wilkes University

This report, prepared by The Institute for Public Policy and Economic Development, offers an overview of vocational education in the United States and a glimpse into the future of trades occupations in Northeast Pennsylvania.

Rethinking the Trades:

Expectations and Opportunities for Economic Advancement

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The Institute is a non-profit research organization dedicated to empowering business and community leaders with research based strategies for informed decision making. We conduct independent, non-biased research to identify the opportunities, issues and challenges unique to the region and find innovative solutions to help solve the problems facing our communities. The Institute also offers a wide array of research, consulting and support services to help organizations boost productivity, increase profitability and be successful in their missions.

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Lynn Biga, Luzerne County Head Start
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RESEARCH TEAM

Teri Ooms, Executive Director
Andrew Chew, Sr. Research and Policy Analyst
Megan Stachowiak, Research Analyst
Jill Avery-Stoss, Research & Data Coordinator
Joe Gallo, Research Assistant
Kara McGrane, Research Assistant

SIGNATURE UNDERWRITERS

Andrew J. Sordoni Foundation
Luzerne County
PPL Electric Utilities
Sordoni Family Foundation

CONTRIBUTING UNDERWRITERS

Borton-Lawson
Geisinger Health System

SUPPORTING UNDERWRITERS

Berkshire Asset Management
BlackOut Design
Commission on Economic Opportunity
FNCB
Greater Hazleton CANDO
Highmark Blue Cross Blue Shield
M & T Bank
McCarthy Tire
Mohegan Sun Pocono
Navient
NET Credit Union
PNC
Prudential Retirement Services
Rosenn Jenkins Greenwald, LLC
The Luzerne Foundation
The Wright Center for Community Health
UGI Utilities

Preface

In June 2019, the Education & Workforce Development (Ed/WFD) and Jobs, Economy, & Economic Development (JEED) Task Forces met to discuss the release of the Economic Competitiveness report presented at Indicators 2019 and to identify a research agenda for the 2019-2020 year.

It was determined at that time that this upcoming year's research should again be a joint effort because of the nature of the two task forces is inextricably linked especially since there was a workforce shortage at the time that was predicted to last at least two decades.

Based on discussion, it was decided that there were several education and workforce related sections in the economic competitiveness report that should be elevated to their own research brief and that several areas were not addressed.

Therefore, the following sections of the report have been developed into stand-alone research briefs:

- Skills Shortages
- Labor Demand
- Industrial Automation
- Comparative Analysis of Job Opportunities and Higher Education Completions

The following new briefs were developed in the fall 2019 – winter 2020 time frame:

- Rethinking the Senior Worker
- Adapting to the Millennial Worker & Beyond
- Soft Skills & the Workforce
- Rethinking the Trades – Regional Opportunities

With the recent economic challenges of the current pandemic, some of this research reflects economic circumstances that have been upended, at least in the short-term. However, it should be noted that the data serves as a pre COVID-19 baseline in order for us to evaluate changes.

Further, as we move through recovery and reach February 2020 economic activity, the labor shortage may be center stage again. Therefore, the information outlined in these briefs is pertinent and gives employers an opportunity to plan for the future in a more informed and thoughtful way.

Trade Education

In 2017, The Institute discussed the state of vocational education and apprenticeships in a [regional study](#). Vocational education and apprenticeship programs in the United States can adequately be summed up in one word, for better or worse: decentralized. On one hand, different state economies need different kinds of workforces, and active state-level involvement in crafting vocational education policies and apprenticeship program criteria has resulted in many innovative, flexible, and diverse approaches to meet the particular strengths and deficits in every state. On the other hand, employers and educators alike must navigate a highly complex maze of federal, state, and local programs – each with its own standards and requirements – in order to deliver access to high-quality career and technical education, as well as a productive apprenticeship experience. Additionally, as the Organization for Economic Cooperation and Development (OECD) notes in their 2013 report, *A Skills Beyond School Review of the United States*, credentials and certifications in most occupations are not as organized or uniformly defined domestically as they are internationally.ⁱ According to the OECD’s review, while the lack of a national standard for industry certifications allows the domestic labor market to be maximally responsive to changes in demand, it also muddles the ability of both students and employers to match credentials to open positions.ⁱⁱ

The fragmented nature of vocational education in the United States is primarily an issue of access – not outcome. A total of 87 percent of apprentices in the U.S. are employed upon the completion of their programs in positions with average starting wages above \$50,000.ⁱⁱⁱ CTE graduates can make nearly 30 percent more than high school graduates in programs that are just a fraction of the cost and time spent in a bachelor’s degree program.^{iv}

The trends in CTC in Lackawanna and Luzerne Counties have shown little change over the past five years and certainly do not reflect the full scope of employment opportunity in the region resulting from technical education.

CTC Enrollment: Lackawanna County					
Sending District	2015	2016	2017	2018	2019
Abington Heights	38	33	34	32	31
Carbondale Area	38	47	45	50	59
Dunmore	35	44	36	33	30
Lakeland	43	53	49	48	59
Mid Valley	51	62	41	57	63
North Pocono	61	85	75	81	88
Old Forge	48	52	55	53	57
Riverside	58	63	62	59	51
Scranton	225	244	232	250	234
Valley View	68	79	65	43	40
County Total	665	762	694	706	712

Source : Future Ready PA Index

CTC Enrollment: Luzerne County					
Sending District	2015	2016	2017	2018	2019
Crestwood	75	87	80	62	70
Dallas	46	44	39	50	48
Greater Nanticoke Area	100	93	97	102	76
Hanover Area	149	143	128	146	161
Hazleton Area	880	759	667	644	667
Lake-Lehman	41	44	35	37	44
Northwest Area	56	55	55	49	52
Pittston Area	115	125	112	118	90
Wilkes-Barre Area	421	409	383	369	362
Wyoming Area	55	62	64	60	78
Wyoming Valley West	330	340	345	346	353
County Total	2,268	2,161	2,005	1,983	2,001

Source : Future Ready PA Index

The Trades

One avenue for students of vocational education is to pursue careers in the trades. Some of the trades require apprenticeships or journeyman training. Others require certification, and yet others require two-year degrees. Those requiring two-year degrees are the focus of this analysis.

The trades fall into multiple categories. They include building trades, mechanical trades, technology, and medical trades. Lackawanna and Luzerne Counties are poised to add over 4,200 jobs to those referenced in this report. The average salary today is \$45,300.



Building trades encompass a variety of construction jobs, including carpentry, electrician, HVAC, and plumbing. The occupations in this category require vocational degrees and have the capacity to offer family-sustaining wages. As evidenced by the table below, there is a demand in northeastern Pennsylvania.

The table highlights opportunities in the selected occupations, anticipated in the next five years. There are 3,382 people currently employed in the fields and there will be over 1,650 openings through growth, transfers, and retirements. The salaries do not reflect individuals who open their own businesses.

Trades in Lackawanna and Luzerne Counties, 2019Q4			
Occupation	Current		5-Year
	Employment	Average Annual Wages	Total Demand
Carpenters	1,085	\$45,900	464
Electricians	988	\$59,800	531
Plumbers, Pipefitters, and Steamfitters	628	\$48,500	335
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	568	\$49,500	275
Cabinetmakers and Bench Carpenters	113	\$36,100	47

Mechanical trades include occupations such as machinists, elevator mechanics, electric motor repairers, avionics technicians, and auto, truck, and heavy equipment mechanics. In the next five years, over 1,000 of these job opportunities will be available in the region. The salaries range from \$33,000 to nearly \$79,000 and only reflect those not operating their own businesses.

Trades in Lackawanna and Luzerne Counties, 2019Q4			
Occupation	Current Employment	Current	5-Year
		Average Annual Wages	Total Demand
Automotive Service Technicians and Mechanics	1,306	\$33,000	497
Machinists	622	\$42,200	277
Automotive Body and Related Repairers	296	\$38,300	126
Mobile Heavy Equipment Mechanics, Except Engines	213	\$47,100	90
Structural Metal Fabricators and Fitters	177	\$49,200	61
Electrical Power-Line Installers and Repairers	165	\$78,700	57
Elevator Installers and Repairers	35	\$78,400	20
Automotive Glass Installers and Repairers	31	\$34,900	13
Electric Motor, Power Tool, and Related Repairers	30	\$44,200	13
Rail Car Repairers	21	\$56,800	9
Farm Equipment Mechanics and Service Technicians	20	\$35,700	8
Avionics Technicians	11	\$61,100	4

The technology trades represent a number of sectors, including computers, telecommunications, entertainment, and transportation repairers and technicians. This sector will experience approximately 390 job openings within the next five years, with a salary range from \$36,300 to just over \$70,000. Two-year degrees, certificates, credentialing, and apprenticeships provide the education and training for careers in these areas.

Trades in Lackawanna and Luzerne Counties, 2019Q4			
Occupation	Current Employment	Current	5-Year
		Average Annual Wages	Total Demand
Telecommunications Equipment Installers and Repairers, Except Line Installers	231	\$66,700	92
Telecommunications Line Installers and Repairers	180	\$60,400	76
Computer, Automated Teller, and Office Machine Repairers	165	\$44,000	65
Security and Fire Alarm Systems Installers	118	\$47,200	66
Electrical and Electronics Repairers, Commercial and Industrial Equipment	91	\$48,000	33
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	63	\$69,200	22
Electronic Home Entertainment Equipment Installers and Repairers	51	\$37,700	22
Radio, Cellular, and Tower Equipment Installers and Repairers	17	\$70,700	8
Electrical and Electronics Installers and Repairers, Transportation Equipment	14	\$58,300	5
Electronic Equipment Installers and Repairers, Motor Vehicles	10	\$36,300	2

The medical trades include a variety of job titles. Examples include:

- Dental assistant
- Paramedic
- Phlebotomist
- Respiratory therapist
- Clinical laboratory technician
- Physical therapy assistant
- Veterinary technician
- Biomedical technician
- Radiologic Technology
- Ultrasound Technician

Trades in Lackawanna and Luzerne Counties, 2019Q4			
Occupation	Current Employment	Current	5-Year
		Average Annual Wages	Total Demand
Emergency Medical Technicians and Paramedics	762	\$29,700	209
Dental Assistants	537	\$39,200	295
Medical and Clinical Laboratory Technicians	298	\$49,300	101
Medical and Clinical Laboratory Technologists	289	\$49,300	92
Phlebotomists	246	\$33,300	155
Respiratory Therapists	226	\$52,400	70
Veterinary Technologists and Technicians	157	\$36,900	68

Several occupations in this category are reflected in the table above. Over 900 jobs will be available in these fields in Lackawanna and Luzerne Counties in the next five years.

Conclusion

According to Adecco, the world’s second largest provider of human resources and temporary staffing, workers 55 years and older comprise 20 percent to 35 percent of the trades workforce. As they retire, there will be increased opportunity in all trade occupations. In The Institute 2017 CTE study, data demonstrated that a large number of graduates from trade schools go on to further their education and become successful entrepreneurs.

Recommendations

Parents, educators, career counselors, and others influencing career decisions in youth should commit to sharing information on trade occupations, their economic opportunity, and the skills and education needed to obtain employment in the trades. It is most important to abandon the perception that such careers lack ability to provide economic security or advancement.^v According to a Washington Post article, skilled trade positions have maintained the number one position in vacancies from 2010 – 2018 (the year the article was written).

Footnotes

ⁱ Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing. <http://dx.doi.org/10.1787/9789264202153-en>

ⁱⁱ Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing. <http://dx.doi.org/10.1787/9789264202153-en>

ⁱⁱⁱ United States Department of Labor (2016, June 2). *U.S. Labor Department Announces \$10.4M in Grants to Expand, Expedite Apprenticeships in 51 States and Territories, and District of Columbia*. Retrieved from <https://www.dol.gov/newsroom/releases/eta/eta20160602-0>

^{iv} Association for Career & Technical Education (2015). *CTE Prepares the Qualified Workforce*. Retrieved from <https://www.acteonline.org/general.aspx?id=5748#.WUpftNTHcss>

^v Richardson, Brenda. (2018). *Labor Shortage is creating Challenges to Finding Qualified Contractors for Home Repairs*. The Washington Post. Retrieved from https://www.washingtonpost.com/realestate/when-expert-tradespeople-are-hard-to-find/2018/04/18/f668d874-2d4b-11e8-8688-e053ba58f1e4_story.html .